

REMARKS

Claims 1-8 are pending in this application. Claim 1 is the only independent claim. By this amendment, claims 1-8 are amended to comply better with U.S. practice by correcting minor informalities contained therein without narrowing the scope thereof. Reconsideration in view of the above amendments and following remarks is respectfully solicited.

The Claims Define Patentable Subject Matter

The Office Action rejects: (1) claims 1-3 and 6-8 under 35 U.S.C. §102(a) as being anticipated by U.S. Patent No. 5,784,022 to Kupfer (hereafter Kupfer); (2) claim 4 under 35 U.S.C. §103(a) as being unpatentable over Kupfer in view of U.S. Patent No. 5,270,724 to Ajioka (hereafter Ajioka); and (3) claim 5 under 35 U.S.C. §103(a) as being unpatentable over Kupfer in view of Ajioka and further in view of U.S. Patent No. 5,166,690 to Carlson et al. (hereafter Carlson).

These rejections are respectfully traversed.

The Claims Fail to be Anticipated

Applicant respectfully submits that Kupfer, either alone or in combination with Ajioka and/or Carlson, fails to teach or suggest each and every feature as set forth in the claimed invention.

Claim 1 recites, *inter alia*, a device for determining a position of a vehicle on a roadway by using radio waves which are emitted from the device and reflected by the vehicle and received by at least two array antennas arranged across the roadway. Each of the array antennas includes a number of antenna elements, one of

the antenna elements in the respective array antenna constituting a phase center of the array antennas. The antenna elements of the array antennas are connected to one another such that a distance between the phase centers of the array antennas included is smaller than half the width of an individual array antenna.

For example, the problem to be solved by the present invention is to reduce the distance between the phase centers of two or more array antennas. The present invention is directed towards achieving a small distance between the centers of at least two array antennas. By interweaving antenna elements of the array antennas with one another, the antenna centers for the array antennas are capable of being at a small mutual distance.

Furthermore, the present invention lies within the field of road tolls and relates to determining the position of a vehicle on the roadway.

In contrast with the present invention, Kupfer relates to flying objects being precisely located and measured with regard to their positions. (see Kupfer, col. 3, lines 27-33). In other words, Kupfer merely discloses a device for improving the resolution of a monopulse radar when detecting flying object. As such, the Kupfer disclosure merely enables the device to distinguish between two flying objects located in the same radar beam. (see Kupfer, col. 1, lines 8, 37, 41-43 and col. 2, lines 26-31).

As such, the present invention lies within a totally different technology field as that of Kupfer. In addition, Kupfer fails to teach or suggest reducing a distance between phase centres of two

or more array antennas. In fact, Kupfer fails to even mention such a distance, much less any hint as to how it could be reduced.

Furthermore, Kupfer requires, and even stresses, that at least three antennas are required in its system. (see for example, Kupfer col. 4, lines 39-41, Kupfer's claim 1, and col. 4, lines 3-4).

However, in the present invention, at least two array antennas are being used, not at least three antennas as required by Kupfer.

According to MPEP §2131, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. Of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ...claims." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913 (Fed. Cir. 1989). The elements must be arranged as required by the claims, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicant respectfully submits that the Office Action has failed to establish the required *prima facie* case of anticipation because the cited reference, Kupfer, fails to teach or suggest each and every feature as set forth in the claimed invention.

Applicant respectfully submits that independent claim 1 is allowable over Kupfer for at least the reasons noted above.

As for each of the dependent claims not particularly discussed above, these claims are also allowable for at least the reasons set forth above regarding their corresponding independent claim, and/or for the further features claimed therein.

Accordingly, withdrawal of the rejection of claims 1-3 and 6-8 under 35 U.S.C. §102(a) is respectfully solicited.

The Claims Fail to be Obvious

Applicant also respectfully submits that both Ajioka and Carlson fail to make up for the deficiencies found in Kupfer.

To establish a *prima facie* case of Obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 706.02(j).

1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000).

Like Kupfer, both Ajioka and Carlson fail to teach or suggest reducing a distance between phase centres of two or more array antennas.

As such, applicant respectfully submits that the combination of Kupfer with Ajioka and/or Carlson fail to teach or suggest each and every feature as set forth in the claimed invention.

Applicant respectfully submits that not only does the references fail to teach or suggest each and every feature as set forth in the claimed invention, but that one of ordinary skill in

the art would not have been motivated to combine/modify the teachings of Kupfer with Ajioka and/or Carlson because there is no teaching or suggestion in any of the references regarding how or why one would modify such systems to arrive at the claimed invention.

Applicant respectfully submits that dependent claims 4 and 5 are allowable over the cited combination of references for at least the reasons noted above.

Accordingly, withdrawal of the rejection of claims 4 and 5 under 35 U.S.C. §103(a) is respectfully requested.

Conclusion

In view of the foregoing, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Carolyn T. Baumgardner (Reg. No. 41,345) at (703) 205-8000 to schedule a Personal Interview.

Appl. No.: 09/700,926
Docket No.: 1807-0151P
Reply to Office Action of November 19, 2003

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment from or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17; particularly, the extension of time fees.

Respectfully submitted,
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